ABSTRACT OF THE DISCLOSURE

The present invention is directed to a road condition estimation apparatus for estimating a road condition for use in a vehicle having a steering control unit for actuating a device mechanically independent of a manually operated steering member to steer at least a wheel of front and rear wheels. The apparatus includes an actuating signal detection unit for detecting an actuating signal for actuating the device of the steering control unit, an aligning torque estimation unit for estimating an aligning torque produced on the wheel on the basis of the actuating signal detected by the actuating signal detection unit, and a vehicle state variable detection unit for detecting a state variable of the vehicle. The apparatus further includes a wheel factor estimation unit for estimating at least one of wheel factors including a side force and a slip angle applied to the wheel on the basis of the vehicle state variable, and a grip factor estimation unit for estimating a grip factor of at least a tire of the wheel, in accordance with a relationship between the estimated aligning torque and the estimated wheel factor.